

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 2, 3 and 6 have been amended. Claims 2, 3 and 6 have all been amended to be in independent form. Claims 3 and 6 have also been amended to improve their readability without narrowing their scope. New claims 7-10 have been added. New claims 8-9 are method claims corresponding to claims 2 and 6, respectively. No new matter has been added.

This amendment adds and changes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-10 are now pending in this application.

Allowable subject matter

Applicants appreciate the indication that claims 2-6 contain allowable subject matter. Claims 2, 3 and 6 have been amended to be in independent form, including all the limitations from independent claim 1, from which they directly depended. Thus claims 2, 3 and 6 are in *prima facie* condition for allowance. Claims 4 and 5 depend from claim 3 and are likewise in *prima facie* condition for allowance.

Drawings

The Office Action indicated that the Figures 1, 2A and 2B should be designated by a legend such as --Prior Art--. Applicants have amended Figures 1, 2A and 2B to label them as "PRIOR ART".

Rejection under 35 U.S.C. § 103

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication 2002/0033446 to Ichimura et al. (hereafter "Ichimura") in view of U.S. Patent No. 4,775,789 to Albridge et al. (hereafter "Albridge"). Applicants respectfully traverse this rejection for at least the following reasons.

Claim 1 is directed to a 3-grid neutral beam source and includes “a grid assembly including first to third grids, which are sequentially overlapped with each other by interposing an insulation material therebetween for obtaining a great amount of ion flux at a low ion energy.” Ichimura and Albridge fail to suggest at least this feature of claim 1.

Ichimura discloses a neutral beam processing apparatus (title). The apparatus includes a plasma production cell 1 with a production cell wall 2 (Fig. 1, p. 3, paragraph [0041]). The apparatus also includes an ion pulling out electrode adjacent the plasma production cell 1, the ion pulling out electrode including a screen electrode 3a closest the plasma production cell 1, an accelerating electrode 3b and a decelerating electrode 3c (See Fig. 1, p. 4, paragraph [0041]). Ichimura also discloses applying a voltage to the electrodes (p. 5, paragraph [0052]).

Ichimura, however, fails to disclose the grid assembly with the insulation material arrangement as recited in claim 1. The Office Action equates the insulative spacer 7 of Ichimura with the insulation material as claimed. The insulative spacer 7 of Ichimura, however, is not arranged so as to be interposed between the electrodes 3a-3c of Ichimura, which the Office Action equates with the grids as claimed. Thus, Ichimura fails to disclose the arrangement of the insulating material as recited in claim 1.

Albridge was cited for allegedly disclosing a reflective member for converting an ion beam into a neutral beam, but also fails to disclose an insulating material arranged between three grids in the manner recited in claim 1, and thus fails to cure the deficiencies of Ichimura.

Moreover, the Office Action provides no proper motivation for modifying the Ichimura apparatus to include the neutralizing plates of Albridge. Ichimura discloses converting an ion beam into a neutral beam via a charge exchange reaction with neutral gas in neutralization cell 11 (p. 5, paragraph [0054]). The Office Action provides no proper motivation for replacing the neutralization cell of Ichimura, which neutralizes ions by means of a charge exchange reaction with neutral gas, with the neutralizing plates of Albridge. The Office Action suggests that such a modification “would have been an obvious substitution of known equivalents.” Neither Ichimura nor Albridge, however, suggest that a neutralization cell that neutralizes ions by means of a charge exchange reaction with a neutral gas is

equivalent to neutralizing plates for neutralizing ions. Thus, the Office Action provides no proper motivation for modifying the Ichimura apparatus, and the rejection based on Ichimura and Albridge must fail for at least this reason.

New claims

New claims 7-10 have been added, which claims are believed to be patentable over Ichimura and Albridge.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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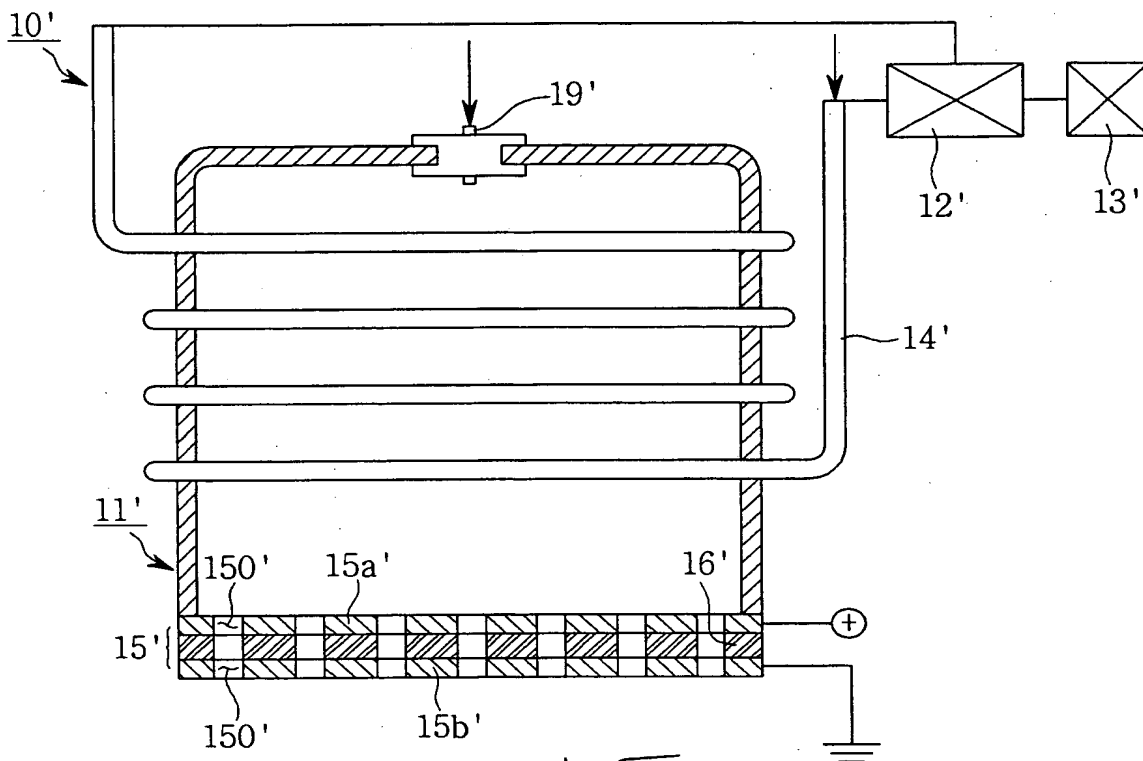
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Amendments to the Drawings:

The drawing sheets attached in connection with the above-identified application containing Figures 1, 2A and 2B are being presented as a new formal drawing sheets to be substituted for the previously submitted drawing sheets. The drawing figures 1, 2A and 2B have been amended. Appended to this amendment is an annotated copy of the previous drawing sheet which has been marked to show changes presented in the replacement sheet of the drawing.

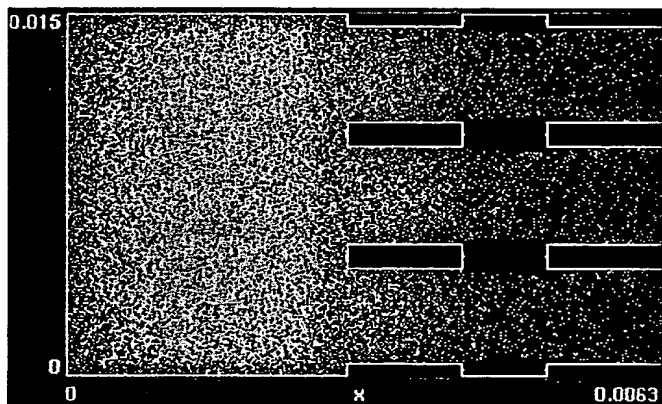
The specific changes which have been made to Figures 1, 2A and 2B is to include the legend "PRIOR ART".

FIG. 1



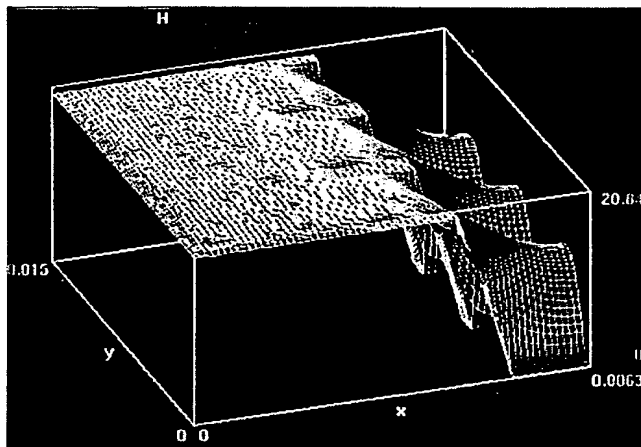
PRIOR ART

FIG. 2A



PRIOR ART

5 FIG. 2B



PRIOR ART